



Gender, Health and Malaria

Despite prevention and control efforts, malaria remains a leading cause of morbidity and mortality worldwide. According to data for 2005, an estimated 1 million deaths were related to malaria. Most of these deaths occur in children in high-transmission areas and malaria accounts for approximately one in five of all childhood deaths in Africa. However, the true burden of malaria is difficult to estimate as many people are treated at home and no proper postmortem diagnosis is made in the case of death. As a result, many malaria cases go unreported. (1)

A gender approach contributes to both understanding and combating malaria. Gender norms and values that influence the division of labour, leisure patterns, and sleeping arrangements may lead to different patterns of exposure to mosquitoes for men and women. There are also gender dimensions in the accessing of treatment and care for malaria, and in the use of preventative measures such as mosquito nets. A thorough understanding of the gender-related dynamics of treatment-seeking behaviour, as well as of decision-making, resource allocation and financial authority within households is key to ensuring effective malaria control programmes. Therefore, gender and malaria issues are increasingly being incorporated into malaria control strategies in order to improve their coverage and effectiveness in different contexts.

What do we know?

- There are four main types of parasite that cause human malaria - *Plasmodium vivax*, *P. malariae*, *P. ovale* and *P. falciparum*. *P. falciparum* malaria is the most deadly, and is most common in sub-Saharan Africa, accounting in large part for the extremely high malaria-related mortality in this region. (2)
- Those at highest risk biologically are infants and young children (from six months to five years), pregnant women, non-immune people (such as travellers, labourers and populations moving from low-transmission to high-transmission areas) and people living with HIV/AIDS.
- Available evidence suggests that given equal exposure, adult men and women are equally vulnerable to malaria infection, except for pregnant women who are at greater risk of severe malaria in most endemic areas. (3)
- Data on malaria is often not sex-disaggregated.

Malaria is a particular problem for pregnant women

- The rate of malaria infection is higher in pregnant women because of their decreased immunity. Studies have shown that infection rates are highest in first and second parity women with lower rates in later pregnancies. (4, 5, 6)
- Pregnant women with malaria have an increased risk of abortion, stillbirth, premature delivery and low-birth-weight infants. (3, 5, 6)
- *P. falciparum* is generally accepted as a leading cause of anaemia in pregnant women. (7) It is estimated that anaemia causes as many as 10 000 maternal deaths each year. (4) However, despite the dangerous impact of malaria on pregnant women and their infants, it is estimated that less than 5% of pregnant women have access to effective interventions. (5)
- Although *P. vivax* is a more common cause of malaria than *P. falciparum* in many parts of the tropics outside Africa, much less is known about its harmful effects on pregnancy. Available research indicates that although the effects of *P. vivax* infection are less severe compared to *P. falciparum*, *P. vivax* malaria during pregnancy is also associated with maternal anaemia and low birth weight. (8)
- Women with dual HIV and malaria infection are at particular risk of severe anaemia and adverse birth outcomes. One study in Kenya found that HIV-seropositive women with malaria were twice as likely to have anaemia than HIV-seronegative women with or without malaria. (9)

- Adolescent girls are particularly vulnerable to malaria. In many sub-Saharan African settings, adolescents are often parasitaemic and anaemic when they first become pregnant. According to data from Malawi, both non-pregnant and pregnant adolescent girls had significantly higher parasite rates than women over 19 years of age. (10)
- As adolescents often face difficulties in accessing health services, pregnant adolescent girls might not seek timely care for malaria. Participants in a study in Uganda, for example, perceived pregnant adolescents as a group least likely to use antenatal care. (11) Although the study indicated that pregnant adolescents recognized the importance of seeking preventive care for malaria, there were several constraints that limited access to services. These were mainly the stigma associated with adolescent pregnancy and the negative attitude of health workers. Similar findings were also reported in a study in Nigeria. (12)

Patterns of exposure often coincide with gender norms and behaviour

- In some societies, men have a greater occupational risk of contracting malaria than women if they work in mines, fields or forests at peak biting times, or migrate to areas of high endemicity for work. (3) Women who get up before dawn to perform household chores may also be exposed to mosquitoes and consequently to malaria infection. (13)
- In other societies, the activities of men and women during peak biting times may result in equal risks of infection. For example, a study in Myanmar on activities that enhance human-vector contact revealed that gender-specific patterns of both leisure and work activities during peak biting periods by men and women placed them at equal risk of contracting malaria through exposure to mosquitoes. (14)
- The division of labour as a result of gender roles may play a significant part in determining exposure to mosquitoes. However very few studies have been conducted to specifically look at this.
- Similarly, in addition to leisure activities, sleeping arrangements may also affect malaria transmission. In some societies, men tend to sleep outdoors and this may increase their risk of exposure to mosquitoes. (15)
- Understanding how gendered patterns of behaviour influence exposure to mosquitoes can therefore assist in developing more-effective recommendations for preventing malaria infection.
- Women often have to ask for their husband's permission to access treatment for themselves and/or their children. (16) A study on gender roles and responses to malaria in Ghana found that women who lacked either short-term or long-term economic support from male relatives, or who disagreed with husbands or family elders about seeking appropriate treatment, faced difficulties in accessing health care for children with malaria. (17) They also faced the heavy burden of the cost of seeking treatment despite often limited access to resources.
- Evidence from some countries indicates that restricted mobility of women may also impede their attendance at primary health care clinics for malaria testing. (18, 19)
- However, in some settings males utilize health care services less than females. For example, a study in Papua New Guinea found that adolescent (10-19 year-old) and adult (20-40 year-old) women were more likely than similarly aged men to walk long distances to obtain malaria treatment at a clinic. (19) The study estimated that 37% of infected adolescent males did not attend for care because of the distance to the clinic. Only 3.8% of infected adolescent females were deterred by distance. It was suggested that men may assign a low priority to their health, making them reluctant to spend much time walking to a health centre even when malaria is suspected. On the other hand, the same men indicated that they might readily attend a clinic if it was nearby.
- These varied findings on access to health services may be explained by varying gender roles and relations across societies, and the gender dynamics of decision-making and access to financial resources. Social customs too can affect the treatment-seeking behaviour of women and men and their access to health services. In Tigray, Ethiopia, focus groups revealed that women are reluctant to see male health workers for cultural reasons, and this may contribute to underreporting of malaria cases among women in the study area. (18)
- Another study in Ethiopia found that women were using Community Health Worker services for malaria less frequently than men because their workload left them little time to attend to their own and their children's health needs. (20) In addition, men dominated in decision-making, and women were not in the habit of expressing their needs and might even be perceived as sexually disloyal if they visited a male health worker.
- It is possible that in settings where there are different ethnic groups, and consequently different languages, that communication with health care workers may be more difficult for women than for men. For example, a study in rural Burkina Faso found that communication between health workers and patients was easier with men since they generally spoke more languages. (21) The study found that 24% of adult women were unable

Access to health care services for malaria can be affected by gender issues, including gender inequality

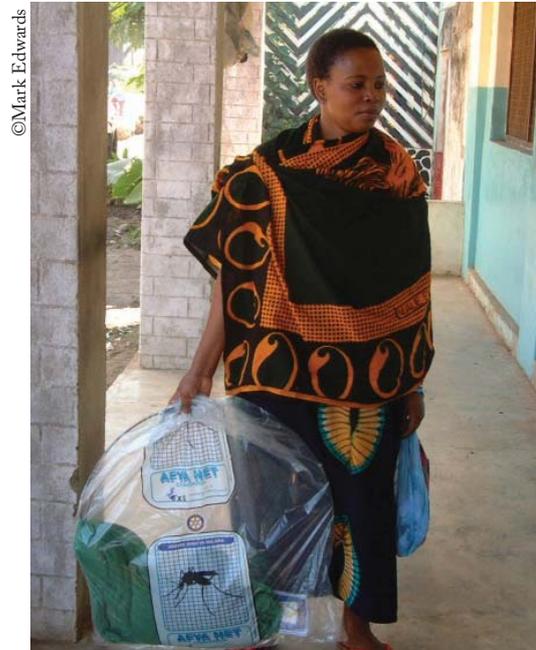
to communicate with the health care worker in the same language compared with only 10% of men.

- Levels of education may also affect malaria treatment-seeking and prevention behaviours. A study in south-eastern Nigeria found that higher levels of education were associated with improved knowledge and practices in relation to appropriate prevention and treatment strategies. (22) Although the study did not include a gender analysis, as women tend to have lower educational and literacy levels than men, this may affect their ability to recognize the signs and symptoms of malaria and their knowledge of available treatment.
- Although both men and women in areas of endemic tropical diseases suffer from discrimination due to class inequality and poverty, women are particularly disadvantaged due to factors linked with gender inequality. A study in Cameroon found that the burden of illness due to malaria rested disproportionately on economically disadvantaged women and on women with low social status. (23) Excess morbidity was found among women who were not employed, women living in poor neighbourhoods, and those living in households without modern amenities.
- As women in most parts of the world have the primary responsibility of caring for others in the household, it is they who provide the majority of treatment to sick family members. However, decisions about seeking treatment for children are made by men and, to a lesser extent, by senior females in the households. Therefore, only targeting women in malaria intervention programmes is insufficient for ensuring improved access to services. (24)

Insecticide Treated Net (ITN) use is also subject to gender norms

- ITNs have been shown to reduce both the number of malaria cases and malaria-related deaths in pregnant women and their children. (5)
- The acceptability and use of ITNs are strongly linked to culturally accepted sleeping patterns, in which gender plays an important role. In some instances, young children sleep with their mother and are therefore protected by her bednet if she has one. Alternatively, if a household only has one bednet, priority may be given to the male head of the household as he is often considered the primary breadwinner. In other contexts, men have very little access to ITNs if they predominantly sleep outside. (25)
- Economic inequities in areas such as the control of household resources also affect access to ITNs and are an important gender issue. In one study in Benin, many

women explained that since they were financially dependent on their husbands, they were unable to purchase an ITN for themselves and their children unless their husbands prioritized the use of bednets (25). The study also revealed that when women did earn an income and had control over this income, they were much more likely than men to purchase an ITN for their household.



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Pregnant woman with ITN

- Women are often responsible for the maintenance of ITNs as part of their household duties. This includes washing and often chemical re-treatment of the nets. Studies on the use of ITNs indicate that women frequently have to request their husband's permission for money to re-treat the nets (25).

Malaria can have different socioeconomic consequences for men and women

- Although more research is needed on this issue, a study in rural Colombia found that illness in an adult male placed the whole household at risk. The workload of women was significantly increased as they had to take care of sick household members as well as replace males in farm production. The study found that 64% of all tasks normally undertaken by the sick person were then performed by women. The women expressed concern about the loss of the main economic provider as well as about having to work harder in order to earn money to buy medicine and food. The study pointed out that although the disease burden was greatest amongst adult males, the indirect economic burden of the disease was greater for women. (26)

What research is needed?

- As most studies on malaria in pregnancy have looked at *P. falciparum* infection, more studies are required on the effects of other malaria parasites on pregnancy, particularly *P. vivax*.
- Research on the interactions between antiretroviral drugs, prophylaxis with co-trimoxazole and antimalarial drugs, particularly with regard to pregnant women, is urgently required.
- More research across a variety of settings is needed on the impact of the division of labour on the vulnerability of men and women to malaria. The gender dimensions of mobile communities, such as the leisure and work patterns of male and female migrant workers, refugees and others, must also be studied when looking at patterns of exposure to malaria infection.
- Increased attention should be paid to the production and distribution of ITNs suitable for pitching outdoors during the farming season when men may remain on the farms.
- There is limited knowledge on the gender dimensions of the economic and social consequences of malaria within households. Further research could be conducted on the strategies of different household members for coping with malaria, particularly with regard to food, economic security and caregiving.
- Research should be carried out on the barriers for men and women in accessing prevention and treatment interventions for malaria. Surveys should examine cultural contexts to ascertain preferences for prevention and treatment, access to financial resources and to what extent limited mobility for women affects both prevention and treatment-seeking behaviour. Such research would be very useful in designing interventions that are more accessible to both women and men.
- Sex-disaggregated data should be collected and analysed on the use of (and compliance with) malaria treatment to see whether these differ for men and women.
- Some studies indicate that there are concerns surrounding the effect of Intermittent Presumptive Treatment (IPT) and other malaria drug treatments on the health of pregnant women and young children. Research should therefore be conducted across a range of settings into the perceptions of men and women regarding malaria treatment, and whether these perceptions affect the use of, and compliance with, treatment regimens.

What are the implications for policies and programmes?

- There are indications in some areas that women may not have full access to malaria prevention and treatment resources. Programme planners should determine if gender-related barriers exist in their coverage areas and if so take steps to remove them.
- Pregnant women and children under five in high-transmission areas should be targeted for malaria control interventions, for free or subsidized ITNs and for appropriate effective treatment through maternal and child health services.
- Many programmes are already moving towards free or highly subsidized malaria prevention and treatment. However, in addition to targeting pregnant women and young children it is important that eligibility criteria must also ensure fair access for other vulnerable and disadvantaged groups (for example, people living with HIV/AIDS, orphan-headed households and widows).
- Malaria prevention in pregnancy using Intermittent Presumptive Treatment (IPT) and ITNs should be one of the packages delivered through antenatal care services.
- In rural areas where health services are a long distance from villages, the provision of community-based malaria treatment through home management of malaria will greatly increase access and the attendance of men and women for treatment and/or testing for malaria.
- Education sessions should be developed alongside treatment, with messages targeted at different groups including mothers, pregnant women, men, fathers, male and female adolescents, and schoolchildren. These sessions could focus not only on early recognition of malaria, but also encourage prevention, more equitable household decision-making and the sharing of caregiving activities.
- Researchers, programme managers and policy-makers working on malaria research, prevention and control need to be trained in gender analysis.
- Young men and women should be meaningfully involved in advocacy and education around malaria through participatory approaches such as peer education initiatives.

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